
Seattle Police Department

Information Systems, Processes, Operations and Technologies

Gap Analysis Summary

Gap Analysis

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1. *Executive Summary*

1.1. Introduction

The United States and the City of Seattle have entered into a Settlement Agreement and Memorandum of Understanding with the Department of Justice with the goal of ensuring that police services are delivered to the people of Seattle in a manner that fully complies with the constitution and laws of the United States, effectively ensures public and officer safety, and promotes public confidence in the Seattle Police Department and its officers. As part of the agreement, a Monitor was appointed by the federal court to assess compliance and report on the implementation of this agreement. A Monitoring Plan has been established which provides a schedule and a blueprint for compliance with the Settlement Agreement.

The Monitor has identified a number of deficiencies with SPD's current IT systems that may hinder compliance with the Settlement Agreement. The agreement requires SPD to have a robust IT system that operationalizes core functions of the department, provides officer performance insights to managers which will allow them to actively supervise and monitor their officers, and to have a comprehensive reporting mechanism to evaluate and assess performance metrics and outcomes as an early intervention system. In order to comply with the requirements of the Settlement Agreement, the Monitor has asked SPD to develop a mature and comprehensive Solution that fulfills all these goals. This information will allow supervisors and officers to carry out their day-to-day operations, effectively manage their staff by identifying potential issues and problems that can then be corrected and prevented through training, supervision, coaching and mentoring, and provide needed training and mentoring to prevent potential problems. This system will also provide the department and the Monitor with greater visibility into SPD's performance data that will facilitate the assessment of compliance with the Agreements.

For the Seattle Police Department (SPD), information, communications and technology are pivotal areas in the transformation of Police operations. As SPD moves forward with improving accountability both internally and with the citizens of Seattle, the following have been identified as desired outcomes:

- Improved professionalism by building awareness and clarifying expectancies
- Provide uniform and consistent standards across the department
- Provide high quality training and the ability to assess its effectiveness
- Develop objective performance expectancies and strong mentoring dynamics with all levels of the organization.

As such, the Department seeks to ensure alignment of its IT systems, operations and processes with current and future needs of the solution desired by the Monitor to be in compliance and meet the goals outlined. To this end, SPD collaborated with an external consultant to review, assess, evaluate and make recommendations for a solution to meet its goals. The Project Team has carried out a Current State Assessment of SPD's existing IT systems, processes, technologies and operations to bring about the gaps and associated risks to determine readiness and maturity towards the desired Future State solution.

This document contains insights on the Gaps that have been uncovered through the Current State Assessment process. It contains the details on the Gaps as well as how the Gaps were uncovered. It also brings about the Risks associated with the Gaps as well as recommended Mitigation Strategies. Again, it is important to note that the Gaps have been analysed from the perspective of the vision of the desired Future State Solution for operationalizing some of the critical SPD Processes, carrying out Performance Management as well as EIS Capabilities. It is also important to be aware that this this document is a sister companion to the Current State Assessment Document as the Gaps detailed here were unearthed during the Current State Assessment.

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Note: The Current State Assessment was carried out at a high level with the aim of highlighting major risks and gaps to deploy and support a solution. This should not be considered an IT audit as this was not in scope for this exercise.

1.2. Methodology

As mentioned above, this Document is a sister companion to the Current State Assessment Document and the Gaps described here were analysed based on the Current State Assessment findings. Therefore the first part of the methodology describes the process to arrive at the Current State Assessment and the subsequent part describes how the Gaps were arrived at based on the Current State Assessment findings.

In order to expeditiously gather information on the current state, the Project Team executed the following major activities to obtain data about the current environment:

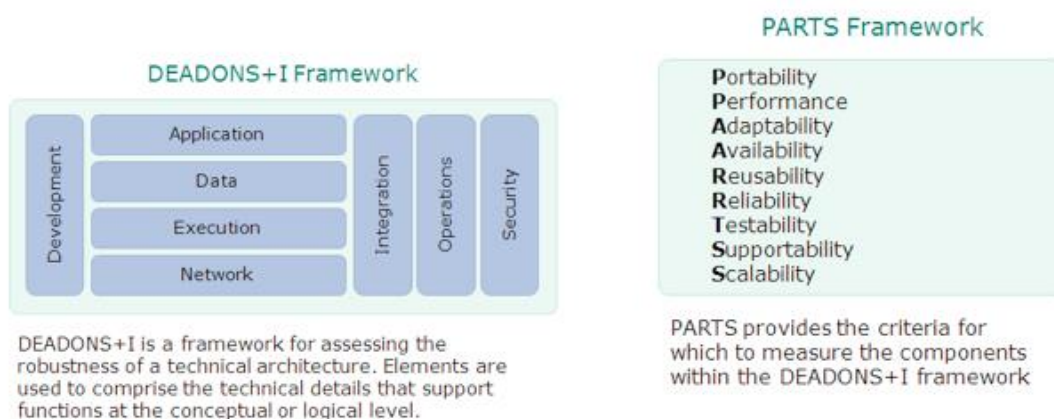
- Held a series of interviews with key functional departments and their business users that will be eventual users of the proposed system for a deep understanding of the desired functions of the proposed solution in the functional areas along with the dependencies, supporting data, supporting systems, processes and personnel
- Held a Briefing and Vision Casting sessions with internal and external SPD stakeholders to capture their vision and thoughts for the desired solution
- Held a series of interviews with IT stakeholders , various functional and technical leads within the IT organization for a deeper understanding of IT functions
- Deeper understanding and assessment of IT through a detailed analysis of IT Documents provided by the IT Department
- Applied the DEADONS+I and PARTS Framework to assess IT & system level capabilities and overall maturity levels
- Benchmarked applications to ascertain personnel productivity of supporting end-user applications

The Project Team assimilated the information gathered to render a maturity level for the IT capabilities and individual systems (e.g. business alignment and effectiveness of applications, etc.) across key dimensions of the DEADONS+I model: Development, Execution, Application, Data, Operations, Security, and Integration as exhibited in the graphic below. The DEADONS+I model has been used in conjunction with the PARTS framework to determine the maturity levels of various capabilities and systems as follows:

- The maturity scale is developed on an idealized basis, meaning that a Level 5 is the absolute best practice in the industry for that activity. Relatively few organizations make the investment to become Level 5 in all the areas, because it would be prohibitively expensive to do so without a commensurate return on investment
- Target states were determined using a combination of feedback from users' stated needs, capability towards achieving the goals of the desired solution and benchmarking with IT maturity models
- The Project Team applied a number of proven qualitative tools, quantitative tools and approaches to ensure a thorough analysis from a qualitative and quantitative perspective, where appropriate
 - Qualitative aspects: process maturity, user perceptions, alignment with best practices, etc.
 - Quantitative aspects: staffing, scheduling, availability, etc.

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- The maturity scales used for these assessments use standard criteria that incorporate best practices. These maturity scales are industry-agnostic and place no value judgment on the IT services being delivered
- The maturity scale is developed on an idealized basis, meaning that a Level 5 is the absolute best practice in the industry for that activity. Relatively few organizations make the investment to become Level 5 in all the areas, as it would be prohibitively expensive to do so without a commensurate payback



DEADONS+I is used to ensure the proper solution architecture artifacts are created to deliver the needed business capabilities:

- **Development:** The development architecture defines the software, tools, and facilities to support rapid prototyping and development of software within a structured and controlled environment
- **Execution:** The execution architecture defines a structured operating environment, hardware platforms, operating system software, and system services for executing application and business processes
- **Application:** The application architecture defines the system flows, interfaces and functional breakdown of the applications being developed. In addition, it provides a specification of the system components and interactions
- **Data:** The data architecture defines the tools, strategy, and services to address data definition and layout, data location and redundancy decisions, data update/refresh approach, data security, DBMS performance, and data backup and recovery of information assets
- **Operations:** The operations architecture consists of the combination of tools, support services, controls, and procedures required to manage the operation of the production environment and lab environments across the enterprise
- **Network:** The network architecture defines the strategy and components to provide reliable local area network (LAN) and wide area network (WAN) services, mobile access, and Internet access to support the implementation of client/server solutions
- **Security:** The security architecture defines the strategy, components, and processes to provide a secure platform for the enterprise. Application, system, and network security are all addressed
- **Integration:** The Integration Architecture defines and details the level to which systems can communicate and share data or business logic as well as ramp up to a middleware platform

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We have used the following scale to rate the services as per the Capability Maturity Model. It is important to note that the model has two parameters. The rating for the Current State provides our assessment on the Current State of that particular aspect or Service whereas the Future State rating on the scale shows the maturity that needs to be achieved for the smooth rollout and operationalization of the End State proposed solutions.

Rating	Maturity Level	Definition	Code
1	Initial	<ul style="list-style-type: none"> • Demand for the capability is recognized by IT and the Business. • The starting point for use of a new or undocumented capability or process. (corrective measures to address immediate needs, ad hoc requests, individual heroics). 	
2	Repeatable	<ul style="list-style-type: none"> • Increased demand from multiple business functions. • Documented sufficiently such that repeating the same steps may be attempted. 	
3	Defined	<ul style="list-style-type: none"> • Capability recognized as necessary for improved business performance. • Processes for planning, design and development are defined and confirmed through published standards 	
4	Managed	<ul style="list-style-type: none"> • The organization recognizes the capability is required for competitive advantage • Capability is quantitatively managed in accordance with agreed-upon metrics. 	
5	Optimized	<ul style="list-style-type: none"> • Optimized and managed in the spirit of deliberate process optimization / improvement. • Service level agreements are in place and opportunities refinement and improvement are consistently reviewed. 	

Leveraging the DEADONS+I and PARTS framework and to carry out a holistic 360 assessment, the assessment was carried out from 2 dimensions. The first was an overall Assessment of IT Capabilities, Functions, Processes and Systems. The second was an analysis of Business Functions and Processes most relevant to meeting the needs of the proposed End State Solution. The two were collated together to assess interdependencies and analyse how IT is supporting the Business Priorities and Functions most relevant to the Monitor desired End State Solution.

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1.3. List of IT Capabilities, Tools, Business Processes & Functions, Applications evaluated to arrive at the Gaps & Risks

The following SPD modules/applications have been considered for the gap analysis.

Capability	Sub – Category	Description
Resources	Program Managers	Overall project management and governance
	Developers	Software developers
	Business Analysts	Analyse the existing or ideal organization and design of systems, including businesses, departments, and organizations, business models and their integration with technology
	Database Administrators	Installation, configuration, upgrade, administration, monitoring and maintenance of databases
	Business Process Definition/Owners	Work with Business and Functional Users to understand and document Business Processes using BPM standards like BPEL
Tools & Technologies	Sustainment Resources	Perform standard business processes
	Identity Management	Tools & technologies for providing role-based authentication
	Single Sign On	Tools & technologies for providing Single Sign On to various systems
	Integration	Tools, technologies & standards for middleware & integration
	Collaboration	Tools & technologies for providing collaboration & workflows
	Reporting	Tools & technologies for providing collaboration & workflows
	Data Services	Tools & technologies for providing data services
	Document Management	Tools & technologies for providing document management
Processes	Mobile Applications	Tools & technologies for creating mobile & smart phone applications
	Portals & Web Services	Standards for portals and web services
	Functional Specifications	Assessment of functional analysis standards and processes

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Capability	Sub – Category	Description
	Design & Development	Assessment of development standards and processes
	Testing	Assessment of testing standards and processes
	Rollout	Assessment of rollout standards and processes
	Project Management	Assessment of program management processes and standards
	Configuration/Change/Release Management	Assessment of configuration management/change management/release management processes and standards
	Event Management	Assessment of event management processes and standards
	Governance	Assessment of governance processes and standards
	Security	Assessment of security processes and standards
Functional Areas within SPD	Use of Force	A Use of Force doctrine is employed by police forces, as well as officers on guard duty, to regulate the actions of police and guard
	Use of Force – Range Data	Assessment of Range application within context of Use of Force
	Use of Force – Canine Insights	Assessment of Canine usage within context of Use of Force
	Use of Force – Force Investigation Team	Assessment FIT team within context of Use of Force
	OPA (Office of Professional Accountability)	Assessment of OPA process
	Use of Force – officer Involved Shootings	Assessment of officer involved shootings within context of Use of Force
	Performance Management System (PMS)/Early Intervention System (EIS)	Assessment of PMS/EIS processes
	Pursuits	Assessments of police pursuits process
	Collisions	Assessments of police accidents
	Terry Stops	Assessments of Terry stops process
	Lawsuits	Assessment of named lawsuits as a part of the PMS/EIS process

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Capability	Sub – Category	Description
	Training	Assessment of training process in PMS/EIS context
Application / Process		
PEDS		
AIM-EIS		
OPA		
eLearning		
eDirectives		
Versadex RMS		
mySPD		
Reporting Data Warehouse (RDW)		
Computer Aided Dispatch (CAD)		
Performance Appraisal System (PAS)		
Performance Mentoring (PMP)		
Admin eForms		
Versadex Versonnel		
Collision		
InCar Video (ICV)		
Digital Evidence Management (DEM)		
Usage of Force (UOF)		
Street Checks		

1.4. Findings

As a result of our analysis, the Project Team found the following categories of findings that are critical and need to be addressed for the development of a BI solution:

Data Quality, Availability and Reliability: Consistency and availability of data for the solution is a challenge, as some business processes are manual, paper-based processes, some systems have incomplete data or out of date data while other data may be scattered across multiple, disparate systems. One example, it is difficult to get consistent data from Street Checks as most data in the system resides as a narrative and currently no way to identify Terry stops. In addition, there is no department wide view of training data. While eLearning has closed gaps on providing training to officers, it does not provide the capability to handle qualifications. Also, training data exists in various systems both electronic and paper-based. Inconsistencies have been raised with HR data being out of sync and out of date between EV5, PEDS and Versonnel.

Data Management & Data Governance: There is a lack of data management and data governance practices within the department that results in compounding issues with system integration and creates inconsistencies across systems resulting in lack of data, inconsistent data, inaccurate data or the same data in different formats. No processes were noted to regularly validate data in business applications and IT systems to ensure quality,

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availability and reliability. Some of the gaps listed under data quality above would be preventable had robust data management and data governance processes be in place.

Process Quality and Reliability: Key business processes including Use of Force, OPA, Collisions, Pursuits and Lawsuits are manual and paper-based and as such are difficult to pull data from, report on, track and audit. Reporting is typically a very manual and limited process, combining data from different systems by hand limits its usefulness due to the availability and consistency of data. In addition, the current EIS process is a mostly manual process which is very labor and time intensive and does not provide any early intervention capabilities and has limited usefulness. Furthermore, there are no processes in place to check and validate data.

IT Governance: While IT governance practices were noted, the Project Team feels the processes such as change control, asset management, project management, controls around the development environment are not robust enough as most are manual in nature, residing on sets of spreadsheets.

Resourcing: For the scope of their work, their project portfolio and size of their environment, SPD IT would not be able to support the implementation of the end state solution without additional assistance.

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2. Identified Gaps for the Proposed BI Solution from an IT Perspective

2.1. Overview

This section consolidates the Gaps and Risks for the proposed End State Solution from an IT Capabilities perspective. For the complete details on each of these areas, please refer to the Current State Assessment Document. It is important to be aware that this Document focuses only on Gaps and Risks uncovered during the Assessment. It does not highlight the areas of IT's Strengths and Accomplishments. Those have been detailed in the accompanying Current State Assessment Document. The reason is to provide a consolidated view to the SPD Management about the biggest areas of Risk in the realization of the proposed End State Solution. The Gaps detailed here are based on the assessment of the following areas of IT: -

- Assessment of IT Capabilities & Functions
- IT Resources
- IT Processes
- IT Operations

2.2. Assessed Gap on overall IT Capabilities and Functions – Availability and Consistency of Information

What is the gap?	Availability and Consistency of Information
Gap Description	<p>SPD has a myriad of Functions which are being supported by Business Processes and Supporting Systems. There are inconsistencies in how Information is generated and preserved across these Functions, Processes and Systems. The key areas of inconsistency have been identified as the following: -</p> <ul style="list-style-type: none"> • Some core functions are like UOF, OPA etc. are generating Data manually through paper based processes • For some core functions like HR (EV5, PEDS, Versonnel) and EIS, the Data that exists in the Tools associated is incomplete and with inconsistencies or out of date • For some areas like Training, Data exists in more than one System which makes it challenging to generate consolidated insights <p>However, it is also important to be aware that some Functions, Processes and Tools have good Data</p>

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	available as well.
Gap category	Data Quality, Availability and Reliability, Process Quality and Reliability
How was the gap found?	This Gap has been uncovered through an analysis of SPD's Functions and IT Systems associated with them. For details, please refer to the next Section of this Document detailing Application & Process Gaps
What is the impact of the gap?	The biggest impact of the Gap is the availability of Information and Insights for the desired Performance Management and EIS Capabilities. It is difficult to draw correlations associating linked Data because of the inconsistencies. Some additional impacts are: - <ul style="list-style-type: none"> • Challenge to Search Data as a result of its existing in multiple Sources and Information Channels • Challenge to store and retrieve historical Data • The Analytics generated cannot be relied upon as a result of the inconsistencies • Also poses a challenge for migration of Data to a consolidated centralized Data Warehouse
What is the impact to the BI solution? (High/Med/Low) & explain	High – The proposed BI Solution is a mature custom solution that will automate Core Operational Processes as well as provide Performance Management and EIS Insights functionality. To achieve this Goal, it's extremely important to have Information Consistency.
Complexity of gap fix? (Simple/Moderate/Complex)	Complex – This issue needs a holistic effort across Data and Process across multiple Dimensions for Target State Maturity
What are the risks associated with the gap?	The biggest foreseen risk is to the inability to generate effective EIS Insights and Performance Management Indicators. Lack of EIS and Performance Management Insights can lead to higher risk of Lawsuits, Civil Penalties and Investigations. Retrieval of Data on demand for Investigations and Lawsuits can also be a challenge.
Risk classification (High/Medium/Low)	High
Mitigation strategy & recommendations	
Changes to technology (y/n) If yes, explain	Good Quality Tools for Data Capture and Entry supported by strong Data Governance Processes
Changes to process (y/n) If yes, explain	. Some suggested approaches are follows: - <ul style="list-style-type: none"> • Creation of Organization Taxonomy and Metadata • Development of consistent processes for Data Capture and Storage • Strong Data Governance Processes • Update business processes to check and re-certify data on a regular basis • Creation of a single Data Warehouse for the Organization scaled bringing in Data from multiple Source Systems in a unified, consistent definition of Data.
Changes to staffing (y/n) If yes, explain	Recommendation to hire some full – time Data Architects that are highly experienced with architecting and maintaining complex Warehouse

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	Systems
Changes to operations (y/n) If yes, explain	The modified processes will have to be supported by the chosen Tool and will have to be operationalized for day – to – day operations in the Field through an effective Training and On – Boarding Process
Estimated effort (High/Med/Low)	High

2.3. IT Capability Gap – Manual Reporting for some Business Functions due to lack of Integration between Systems

What is the gap?	A few Source Systems are not well integrated with each other. As a result, Reporting for Data becomes a manual and time consuming Process.
Gap Description	<p>For some functions requiring integrated Reporting, Reporting is achieved by taking Data from individual Source Systems, associating it through the common identifier and creating Reports manually.</p> <ul style="list-style-type: none"> As an example, Employee Data is a pre-requisite for most of the Reports. However, since all Employee Data is stored in PEDS which is not integrated with a lot of other Applications, Reports have to be generated by querying PEDS and associating the query results with other associated data which makes the Reporting process manual, time consuming and inefficient. Sometimes there are inconsistencies in Employee Hierarchy in Systems like AIM with PEDS because of the lack of integration. The only method of integration is through Roster Files but there are time lags in generation of Roster Files and integration with the dependent System Furthermore, PEDS doesn't have high quality Analytics therefore cannot be relied upon for Analytics. Therefore it creates an increased need for creating Manual Reports by associating Systems manually. But it is very hard to generate desired EIS insights through manual Reports since they require Advanced Analytics Similarly there are other Systems as well that do not integrate with each other and Reports have to be generated manually by associating Data and creating mashups in Excel There is no process to ensure data accuracy within the various systems that contain personnel data such as PEDS, EV5 and Versonnel
Gap category	Data Management & Data Governance, Process Quality and Reliability

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How was the gap found?	This Gap was uncovered during discussions with the some Business Functional Heads and understanding of the Reporting Process for those functions.
What is the impact of the gap?	<ul style="list-style-type: none"> Reporting Delays Higher Resource Utilization of IT since they have to get involved in Report Creation process as well Inaccurate Reports
What is the impact to the BI solution? (High/Med/Low) & explain	High – The proposed BI Solution is likely to be integrated with multiple External Systems and have automated Reporting and Analytics so it will likely replace the existing Manual Processes
Complexity of gap fix? (Simple/Moderate/Complex)	Complex
What are the risks associated with the gap?	Tools such as those managing personnel data need to be kept up to date and accurate in order to make the BI solution function
Risk classification (High/Medium/Low)	High
Mitigation strategy & recommendations	
Changes to technology (y/n) If yes, explain	The proposed Future State Solution (either Custom or Tool based) will likely replace the existing Manual Processes to provide Automated Reporting and Advanced Analytics
Changes to process (y/n) If yes, explain	Yes – The proposed End State Solution is recommended to have triggers for auto generation of Reports. Furthermore, since Data from External Systems will be integrated into a single Warehouse, it will facilitate uniform lookup and near real – time Data updates. Regular review and re-certification of data in key systems is recommended.
Changes to staffing (y/n) If yes, explain	
Changes to operations (y/n) If yes, explain	Yes, business processes need to be updated to accommodate checking and re-certification of data in key systems
Estimated effort (High/Med/Low)	Medium

2.4. IT Resource Gaps

What is the gap?	IT Resource Gap to support prioritized Business Functions
Gap Description	<ul style="list-style-type: none"> SPD IT is significantly understaffed with Resources stretched across multiple assignments & projects. A lot of deficiencies in effective execution of Processes are as a result of over-utilized Resources With 180+ projects underway as well as the SPD Support needed for the proposed Future State Solution, there is clearly a need for Resources with various Skill Sets. Some critical foundational Governance Processes are not in place as a result of SPD being understaffed on Resources.
Gap category	Resourcing

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How was the gap found?	This Gap has been uncovered through a detailed analysis of SPD's IT needs and allocation of the IT Resources towards Business Priorities. Furthermore, interviews with the Staff as well as with Functional Heads have further validated the need for optimally staffing the IT functions.
What is the impact of the gap?	The following risks are anticipated as a result of being understaffed on Resources <ul style="list-style-type: none"> • The proposed Future State Solution is likely to get impacted as a result of being understaffed • Understaffed Resources are likely to have an impact on the 180+ projects underway • Lack of effective Data and Process Governance is likely to impact the proposed Future State EIS and Performance Management Solution
What is the impact to the BI solution? (High/Med/Low) & explain	High – The proposed BI Solution is a mature custom solution that will automate core operational processes as well as provide Performance Management and EIS Insights functionality. To operate a solution of that scale will need mature Foundational Infrastructure and Governance processes implemented and will have to be well staffed with Resources.
Complexity of gap fix? (Simple/Moderate/Complex)	Moderate
What are the risks associated with the gap?	We have uncovered key gaps in some of the core Business Processes and Functions. These have been summarized in the next section. There is a strong need to put in place Tools and Processes to automate some of those areas. There are high priority IT initiatives underway as well that will need Resources to continue their smooth Execution.
Risk classification (High/Medium/Low)	High
Mitigation strategy & recommendations	
Changes to technology (y/n) If yes, explain	
Changes to process (y/n) If yes, explain	
Changes to staffing (y/n) If yes, explain	At a high level, about 15 additional Technology Resources would be recommended. These should be split across the following: - <ul style="list-style-type: none"> • Project Managers • Developers • Data Architects • Application Architects • Security Architects • Business Analysts • Support Engineers
Changes to operations (y/n) If yes, explain	No
Estimated effort (High/Med/Low)	N/A

2.5. IT Process Gaps

What is the gap?	Considering that SPD has highly Data intensive Systems and Data from these Systems is needed for Performance Management & EIS perspectives, there is a need to have strong Data Management and Governance processes. These will address the issue of
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	Data Inconsistencies.
Gap Description	<p>The findings have discovered lack of good Data Management</p> <ul style="list-style-type: none"> SPD does not have adequate Data Management or Data Governance processes or solution in place There is lack of an Enterprise - wide Glossary and Taxonomy that makes it hard to have a consistent definition of desired Insights, KPIs and source data. This was unearthed as one of the key issues in the establishment of Personas and their Information Needs. Putting in place Data Management and Data Governance policies is going to be especially important from the point of view of an advanced analytics in the desired future state solution since there would be a need for common definition of data from source systems and inconsistencies in data can be resolved. SPD has many source systems for different capabilities that need to be all integrated together for the purpose of providing advanced analytics for an Early Intervention System.
Gap category	Process Quality and Reliability
How was the gap found?	This Gap was unearthed in interviews with IT Stakeholders and an a comprehensive 360 Analysis of IT Processes and Tools as well as the needs of the desired Future State Solution
What is the impact of the gap?	Inconsistent and Unclean Data. Lack of clear definition of Insights. Unreliable Performance Management and EIS Insights.
What is the impact to the BI solution? (High/Med/Low) & explain	High - High – The proposed BI Solution is a mature custom solution that will automate Core Operational Processes as well as provide Performance Management and EIS Insights functionality. To achieve this Goal, it's extremely important to have Information Consistency and a standard way of capturing and storing Information.
Complexity of gap fix? (Simple/Moderate/Complex)	High – but is achievable with a commitment of time, budget and resources.
What are the risks associated with the gap?	The biggest foreseen risk is to the inability to generate effective EIS Insights and Performance Management Indicators. Lack of EIS and Performance Management Insights can lead to higher risk of Lawsuits, Civil Penalties and Investigations. Retrieval of Data on demand for Investigations and Lawsuits can also be a challenge.
Risk classification (High/Medium/Low)	High
Mitigation strategy & recommendations	
Changes to technology (y/n) If yes, explain	A Single Unified Tool for Data Capturing, Storing, Warehousing and Reporting is suggested.
Changes to process (y/n) If yes, explain	Looking at the needs of the desired End State System, the Processes most recommended to be put in place

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	include the following: - <ul style="list-style-type: none"> • Creating Information Taxonomy & Enterprise Data Glossary with Metadata • Establishing Data Lineage • Establishing Master Data Management Tool & Processes • Processes for Data Cleanliness, Quality, Consistency and Maintenance
Changes to staffing (y/n) If yes, explain	Yes
Changes to operations (y/n) If yes, explain	Yes
Estimated effort (High/Med/Low)	High

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3. Identified Gaps for Proposed BI Solution from an Application and Process Perspective

3.1. Overview

The following gaps have been identified through the gap analysis process.

3.2. Quality of Data stored in AIM for EIS/UOF/OPA

What is the gap?	At present, the EIS System is Manual, ideally it should be automated from HR Systems
Gap Description	<ul style="list-style-type: none"> Gap between the Data collected and entered for EIS in AIM Quality, Consistency and Cleanliness of Data residing within AIM Time Lag associated with Manual processes for AIM – EIS Data Entry
Gap category	Process Quality and Reliability, Data Quality, Availability and Reliability
Process or Application associated with	AIM – EIS
How was the gap found?	Interviews with Business Users of AIM – EIS
What is the impact of the gap?	<ul style="list-style-type: none"> EIS related Reports are sent to precinct, section captain in paper copies From the time an incident happens to the time it is entered in EIS, it sits on the desk of paralegal; there is also a staffing gap here; there is a backlog usually on the Admin. Desk Paper based copies are forwarded down to Chain of Command Paper based copies are forwarded down to Chain of Command When a lawsuit happens, there is a long process gap; till the time it is settled, it cannot be entered into the EIS System Reports are generated manually. No way of periodic auto generation of reports based on thresholds. Lack of timely information and analytics to Precinct Captains
What is the impact to the BI solution? (High/Med/Low) & explain	High
Complexity of gap fix? (Simple/Moderate/Complex)	Moderate
What are the risks associated with the gap?	The biggest foreseen risk is to the inability to generate effective EIS Insights and Performance Management Indicators. Lack of EIS and Performance Management Insights can lead to higher risk of Lawsuits, Civil

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	Penalties and Investigations. Retrieval of Data on demand for Investigations and Lawsuits can also be a challenge.
Risk classification (High/Medium/Low)	High
Mitigation strategy & recommendations	
Changes to technology (y/n) If yes, explain	A Single Unified Tool for Data Capturing, Storing, Warehousing and Reporting is suggested which will eliminate the Manual Processes of entering Data into AIM in a speedy manner, consistent with the Governance processes associated with it.
Changes to process (y/n) If yes, explain	Yes – the desired End State Solution should have an automated EIS Process integrated with AIM
Changes to staffing (y/n) If yes, explain	Yes – Staffing will be determined based on updated Process and Resources best suited.
Changes to operations (y/n) If yes, explain	Yes
Estimated effort (High/Med/Low)	Medium

3.3. Inefficiencies in Manual Data Capture Process for UOF/OPA and other Key Business Processes

What is the gap?	Manual Paper based Processes for capture of Use Of Force Data, OPA, Pursuits, Collisions, Lawsuits and other processes.
Gap Description	UOF and OPA are one of the most important Data sets to be captured for the EIS and Performance Management insights. UOF incidents specially involving Type II and Type III incidents are captured in very detailed forms through Officers, Supervisors, Witnesses etc. Since the sensitivity of the information is very high and the details that are captured are extensive in nature, the forms are extremely detailed and need a lot of the information to be captured. However, these Forms are paper based and the Data Capture Processes are manual making it difficult to correlate Data across OPA, UOF and EIS and integrate with other Systems. It is important to know however, that this was fixed through building a tool called as Admin eForms. At the time of this writing, the Tool building was completed and the internal User testing generated good Feedback but the Tool didn't go into Production as a result of the decision to rollout with a Vendor Based Solution
Gap category	Process Quality and Reliability
Process of Application associated with	UOF, OPA, Pursuits, Collisions, Lawsuits
How was the gap found?	Interviews with Admin eForms Team, UOF Investigatory Board Members, OPA Investigatory Board Members, FIT/APRS Boards, Compliance team
What is the impact of the gap?	<ul style="list-style-type: none"> • Data is available but resides in physical form making it difficult to get insights as needed • Paper copies are kept locked up which makes it difficult to search them • Paper based forms carry historic data since 2007 so it is extremely difficult to do trending/analysis on historic data

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	<ul style="list-style-type: none"> Since there are multiple packets of forms for every UOF incident, they move around physically making it difficult to keep track. Many times the packets reside on desks for long periods of time.
What is the impact to the BI solution? (High/Med/Low) & explain	<p>High</p> <ul style="list-style-type: none"> Data may not be available for EIS and Performance Management insights Data Capture and Entry Process is time consuming leading to availability of accurate and updated data when needed Difficult to do any detailed trend analysis due to data residing in physical form Reporting Process is manual and extremely time consuming where manual data residing in forms has to be correlated with data from other systems
Complexity of gap fix? (Simple/Moderate/Complex)	High
What are the risks associated with the gap?	UOF Data is highly critical, sensitive and the most important from the point of view of determining Officers' Code of Conduct and Policy violations. Manual paper based Processes and Data make it difficult to get accurate insights into UOF for Early Intervention and Performance Management of Suspect Officers
Risk classification (High/Medium/Low)	High
Mitigation strategy & recommendations	
Changes to technology (y/n) If yes, explain	<ul style="list-style-type: none"> Electronic Forms need to be created along with an automated process to capture all the right details and mandatory fields These need to be enabled through multiple Input Devices, Interfaces and Consoles to enable the Field to accurate Capture Data A strong Data Retention process is needed to preserve Historic Data for trending and insights.
Changes to process (y/n) If yes, explain	<ul style="list-style-type: none"> Backend processes should be put in place to update Data Warehouse with captured details directly from the Front – End Electronic Forms
Changes to staffing (y/n) If yes, explain	Yes – will be based on Automated Process in chosen Tool or Custom Solution
Changes to operations (y/n) If yes, explain	Yes – will be based on Automated Process in chosen Tool or Custom Solution
Estimated effort (High/Med/Low)	High

3.4. Inconsistent Data Capture through the Street Checks Process

What is the gap?	Inaccurate Data for Street Checks Process
Gap Description	<ul style="list-style-type: none"> Most data is based on officers perceptions

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	<ul style="list-style-type: none"> • Data can be incomplete from a variety of reasons such as the person stopped did not give info, the officer could not ask the information, or the data may be kept out of the report as it may be sensitive in nature and could endanger the victim of a crime (due to data disclosure requirements, there is a possibility the suspect can get victim data and go after them, etc.). What is entered is as purely up to the officer • There are hundreds of fields in the MRE application, most are hardly used. No fields are mandatory and data entered in is as the discretion of the officer, what s/he observed, etc. So what is captured may be subjective and not completely accurate • There is a transcription process through which the details from the MRE Application into Versenel. This can create further inaccuracy into Data that is captured in Versenel as a result of translation loss through the transcription process • Time Lags with the transcription process transcribers are over-utilized • Hard to get classified Data owing to multiple narratives • Hard to generate Terry Stops insights
Gap category	Data Quality, Availability and Reliability, Process Quality and Reliability
Process or Application associated with	Street Checks
How was the gap found?	Got disclosed during interviews with Street Checks Business Users
What is the impact of the gap?	<ol style="list-style-type: none"> 1. Reliability of Data from EIS Insights or Performance Management perspective 2. Data may not be available for EIS and Performance Management insights as a result of the time lags associated with the transcription process
What is the impact to the BI solution? (High/Med/Low) & explain	Medium - The Data is needed for Officer Performance and EIS insights but the lack of reliability of Data and the time lags associated with the capture and entering processes make it indeterminate for the Managers/Supervisors to get intelligence around Officers' Activity and Performance
Complexity of gap fix? (Simple/Moderate/Complex)	Moderate – The Gap exists as a result of the Process associated with Data Capture and Entry. There are multiple areas of gaps within the Data Capture and Entry Process which would need to get fixed for the purpose of the insights generation
What are the risks associated with the gap?	Street Checks is one of the most frequent set of interactions between Officers and the Public therefore this presents the greatest potential for determination of Suspect Officers. Having incomplete and unreliable data makes it difficult to make that determination resulting into missed opportunities.
Risk classification (High/Medium/Low)	Medium

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Mitigation strategy & recommendations	
Changes to technology (y/n) If yes, explain	<ul style="list-style-type: none"> The Forms need to be modified to capture all the right details and mandatory fields as desired for EIS and Performance Management insights
Changes to process (y/n) If yes, explain	<ul style="list-style-type: none"> Backend processes should be put in place to update Data Warehouse with captured details directly from the MRE Application in addition to updates to Versonnel and other Transactional Systems
Changes to staffing (y/n) If yes, explain	<ul style="list-style-type: none"> Need to allocate higher number of resources for faster transcription to Versonnel
Changes to operations (y/n) If yes, explain	
Estimated effort (High/Med/Low)	Medium

3.5. Lack of Unified View of Training Data for Officers

What is the gap?	For certain key EIS areas in the desired Future State System, Data is not contained in one System and exists in multiple Systems. This makes it hard to reconcile Data and get consolidated insights.
Gap Description	An example of Data existing in multiple Systems is Training Data. This exists in eLearning, Training, Range Systems as well as EU5. Training Data about Weapons Systems exists in Range whereas generic Training and Certification Data exists in eLearning. Canine Training and Handler Certification Data exists in Paper based Forms.
Gap category	Data Quality, Availability and Reliability, Process Quality and Reliability
Process or Application associated with	Training
How was the gap found?	Got disclosed during interviews with Business Users across Weapons Usage, Canine Unit, UOF Unit etc.
What is the impact of the gap?	Training Insights are a very key part of EIS and Performance Management Insights. Data existing in multiple Systems makes it very hard to associate it together and provide an overall picture of Compliance and Certifications. Furthermore, Reporting of Data becomes a complex exercise as well
What is the impact to the BI solution? (High/Med/Low) & explain	Low – Although the Data exists in multiple Systems, but there is good Data that exists for Training Systems and can be associated
Complexity of gap fix? (Simple/Moderate/Complex)	Moderate – Having a Universal Data Warehouse with a consistent Data Definition should be able to resolve the inconsistencies across Systems and present the End User with a Single integrated view of desired insights.
What are the risks associated with the gap?	Few perceived
Risk classification (High/Medium/Low)	Low
Mitigation strategy & recommendations	
Changes to technology (y/n) If yes, explain	<ul style="list-style-type: none"> Single Consolidated Data Warehouse with consistent definition of Training Data and

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	with migrated Data from the different Systems should resolve the inconsistencies
Changes to process (y/n) If yes, explain	<ul style="list-style-type: none"> Standardized ETL Processes based on the Universal Data Dictionary for Training Data should make for a streamlined Operation
Changes to staffing (y/n) If yes, explain	Yes – Staff will have to be allocated for ensure Governance with the updated Process and Tool
Changes to operations (y/n) If yes, explain	Yes – Operations will have to be updated per the chosen Tool or Custom Solution and the ETL Process Designed for it
Estimated effort (High/Med/Low)	Medium

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4. Summary of Data Gaps

The following table will summarize the data gaps that need to be addressed as a part of the end state solution:

Theme	Gaps/Risks	Remediation
Usage of Force (UOF)	<ul style="list-style-type: none"> Manual, paper-based process Search of data is done by a person and is extremely time consuming Difficult to generate reports and audit data 	<ul style="list-style-type: none"> Automate workflow as part of the suite of applications included with the solution Deploy reporting, ad-hoc reporting and searches as a part of the solution Create re-certification processes to ensure data is kept accurate and up to date over time
Terry Stops	<ul style="list-style-type: none"> Street Checks captures stop data, however, it does not capture Terry stop data Difficult to generate reports and audit data 	<ul style="list-style-type: none"> Create an application to capture Terry stops within the solution; application will have a complete workflow to process and record incidents Create re-certification processes to ensure data is kept accurate and up to date over time
Performance Management Solution/Early Intervention System (PMS/EIS)	<ul style="list-style-type: none"> Data in AIM is often not timely; it can take over a year to be entered in some cases AIM does not capture all of the incident data; often the paper forms need to be referred to Reporting is difficult and must be supplemented with data from other systems Manual processes for areas such as lawsuits and secondary employment Difficult to generate reports and audit data 	<ul style="list-style-type: none"> AIM will be replaced by the proposed PMS/EIS system Legacy AIM data will be imported in to the proposed PMS/EIS system Provide automated workflows for current paper processes Create re-certification processes to ensure data is kept accurate and up to date over time
Training	<ul style="list-style-type: none"> Training and qualification data reside across a number of systems and media such as eLearning, and Range Difficult to generate reports and audit data 	<ul style="list-style-type: none"> Data from the disparate training systems will be imported in to the proposed solution via an ETL process which will validate, cleanse and transform the data before entering the PMS/EIS data warehouse Create re-certification processes to ensure data is kept accurate and up to date over time
Policies/Directives	<ul style="list-style-type: none"> No major gaps found with eDirectives system 	<ul style="list-style-type: none"> Data from eDirectives will be imported in to the proposed solution via an ETL process which will validate, cleanse and transform the data before entering the PMS/EIS data warehouse

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Theme	Gaps/Risks	Remediation
Collision	<ul style="list-style-type: none"> Manual, paper-based process Search of data is done by a person and is extremely time consuming Difficult to generate reports and audit data 	<ul style="list-style-type: none"> Automate workflow as part of the suite of applications included with the solution Deploy reporting, ad-hoc reporting and searches as a part of the solution Create re-certification processes to ensure data is kept accurate and up to date over time
Office of Professional Accountability (OPA) (Administrative Investigations)	<ul style="list-style-type: none"> Manual, paper-based process Search of data is done by a person and is extremely time consuming Difficult to generate reports and audit data 	<ul style="list-style-type: none"> Automate workflow as part of the suite of applications included with the solution Deploy reporting, ad-hoc reporting and searches as a part of the solution Create re-certification processes to ensure data is kept accurate and up to date over time
Pursuits	<ul style="list-style-type: none"> Manual, paper-based process Search of data is done by a person and is extremely time consuming Difficult to generate reports and audit data 	<ul style="list-style-type: none"> Automate workflow as part of the suite of applications included with the solution Deploy reporting, ad-hoc reporting and searches as a part of the solution Create re-certification processes to ensure data is kept accurate and up to date over time
Roster Management	<ul style="list-style-type: none"> Personnel data spread across various systems such as EV5, Versonnel and PEDS Data inconsistencies in each system Systems are not in sync Difficult to generate reports and audit data 	<ul style="list-style-type: none"> Proposed solution will do some checks against personnel data within the system Data management and data governance practices developed as a part of the solution will help Strengthen business processes to ensure onboarding/offboarding processes are completed consistency and accurately Create re-certification processes to ensure data is kept accurate and up to date over time
Personalized and Targeted Awareness	<ul style="list-style-type: none"> Lack of electronic means to check compliance Reports for the most part are manually generated No automated alerts when an officer exceeds thresholds 	<ul style="list-style-type: none"> The proposed solution will have personalized dashboards, a large inventory of reports, the ability to perform ad-hoc reporting as well as automated alerts

